

## **Amendments to the Claims:**

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in **bold and underline**, and material to be deleted is in ~~strikeout~~ and/or in [[double brackets]] if the deletion would be difficult to see.

### **LISTING OF CLAIMS:**

1. (Currently Amended) A method to restart at least an electrically actuated valve including at least a spring, the valve in at least a cylinder of an internal combustion engine, the method comprising:

during a combustion cycle of said cylinder:

applying a current to the electrically actuated valve to overcome an opening or closing spring force of the valve; and  
when the applied current does not overcome the opening or closing spring force to permit the valve to open or close during the cycle of the cylinder, returning said electrically actuated valve to a desired trajectory from an erroneous trajectory when an applied current to close the valve is less than a threshold; and deactivating said electrically actuated valve when an applied current to close the valve is greater than the threshold.

~~detecting an error in the desired trajectory of said electrically actuated valve during a combustion cycle of said engine; and~~

~~returning said electrically actuated valve to said desired trajectory after detecting said error.~~

2. (Currently Amended) The method of claim 1 wherein said electrically actuated valve is an intake valve, and where said erroneous trajectory includes when the applied current does not overcome an opening or closing spring force to permit the valve to open or close during the cycle of the cylinder, and where the method further comprises

increasing the applied current during subsequent valve operation responsive to a number of valve restarts, and decreasing the applied current during subsequent valve operation responsive to a number of on-trajectory valve events.

3. (Currently Amended) The method of claim 1 wherein said electrically actuated valve is an exhaust valve, and where said erroneous trajectory includes when the applied current does not overcome an opening or closing spring force to permit the valve to open or close during the cycle of the cylinder.

4. (Currently Amended) A method to restart at least an electrically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

calculating an error between said signal and a predetermined valve position;

commanding said valve to a predetermined position and deactivating fuel to the cylinder when said error exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and  
operating said valve after said synchronization.

5. (Original) The method of claim 4 wherein said signal is a discrete signal indicating open and closed valve positions.

6. (Original) The method of claim 4 wherein said signal is a continuous signal indicating a valve position.

7. (Original) The method of claim 4 wherein said predetermined position is an open position.

8. (Original) The method of claim 4 wherein said predetermined position is a closed position.

9. (Original) The method of claim 4 wherein said predetermined position is a middle position.

10. (Original) The method of claim 4 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

11. (Cancelled)

12. (Original) The method of claim 4 wherein spark is deactivated when said error exceeds a predetermined amount.

13. (Currently Amended) A method to restart at least an electrically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;

calculating an error between said signal and a predetermined valve position when an applied current to the valve does not overcome an opening or closing spring force to permit the valve to open or close during a cycle of the cylinder;

adjusting a base valve current based on said error;

commanding said valve to a predetermined position when said error exceeds a predetermined amount;

when said valve moves to the predetermined position, synchronizing said valve operation with the position of said engine; and operating said valve after said synchronization; and

when said valve does not move to the predetermined position, deactivating the valve.

14. (Original) The method of claim 13 wherein said signal is a continuous signal indicating a valve position.

15. (Original) The method of claim 13 wherein said predetermined position is an open position.

16. (Original) The method of claim 13 wherein said predetermined position is a closed position.

17. (Original) The method of claim 13 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

18. (Original) The method of claim 13 wherein said valve current adjustment increases current to said valve.

19. (Original) The method of claim 13 wherein said valve current adjustment decreases current to said valve.

20–32. (Cancelled)

33. (New) A method of controlling at least an electrically actuated valve including at least a spring, the valve in at least a cylinder of an internal combustion engine, the method comprising:

applying a current to the electrically actuated valve to overcome an opening or closing spring force of the valve during a combustion cycle of said cylinder; and

restarting the valve when the applied current does not overcome the opening or closing spring force to permit the valve to open or close during the cycle of the cylinder,

where the restarting includes: returning said electrically actuated valve to a desired trajectory from an erroneous trajectory when an applied current to

close the valve is less than a threshold, and then adjusting the applied current during subsequent valve operation, where the current is adjusted responsive to a number of valve restarts; and

deactivating said electrically actuated valve and deactivating the cylinder in which the electrically actuated valve resides when an applied current to close the valve is greater than the threshold.

34. (New) The method of claim 33 further comprising deactivating said electrically actuated valve responsive to the number of valve restarts.

35. (New) The method of claim 33 wherein the applied current during subsequent valve operation is increased responsive to the number of valve restarts, and further where the applied current during subsequent valve operation is decreased responsive to a number of on-trajectory valve events.

36. (New) The method of claim 33 further comprising synchronizing valve operation with a position of said engine, wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

37. (New) The method of claim 33 wherein the desired trajectory is based on a speed of said engine.

38. (New) The method of claim 33 wherein the desired trajectory is based on a load of said engine.

39. (New) A method to restart at least an electrically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:  
processing a signal indicative of a valve position;  
calculating an error between said signal and a predetermined valve position;

commanding said valve to a predetermined position and deactivating spark to the cylinder when said error exceeds a predetermined amount;

synchronizing said valve operation with the position of said engine; and  
operating said valve after said synchronization.

40. (New) The method of claim 39 wherein said signal is a discrete signal indicating open and closed valve positions.

41. (New) The method of claim 39 wherein said signal is a continuous signal indicating a valve position.

42. (New) The method of claim 39 wherein said predetermined position is an open position.

43. (New) The method of claim 39 wherein said predetermined position is a closed position.

44. (New) The method of claim 39 wherein said predetermined position is a middle position.

45. (New) The method of claim 39 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

46. (New) The method of claim 39 wherein fuel is deactivated when said error exceeds a predetermined amount.

47. (New) A method to restart at least an electrically actuated valve in at least a cylinder of an internal combustion engine, the method comprising:

processing a signal indicative of a valve position;  
calculating an error between said signal and a predetermined valve position;

commanding said valve to a predetermined position when said error exceeds a predetermined amount, wherein said predetermined position is a middle position;

synchronizing said valve operation with the position of said engine; and  
operating said valve after said synchronization.

48. (New) The method of claim 47 wherein said signal is a discrete signal indicating open and closed valve positions.

49. (New) The method of claim 47 wherein said signal is a continuous signal indicating a valve position.

50. (New) The method of claim 47 wherein said predetermined position is an open position.

51. (New) The method of claim 47 wherein said predetermined position is a closed position.

52. (New) The method of claim 47 wherein said predetermined position is a middle position.

53. (New) The method of claim 47 wherein said synchronization is attempted after a predetermined number of cycles of said cylinder.

54. (New) The method of claim 47 wherein fuel and spark are deactivated when said error exceeds a predetermined amount.